



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,074	02/26/2004	Akifumi Nagao	56937-110	4317

7590 02/21/2007
McDERMOTT, WILL & EMERY
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER

FARAGALLA, MICHAEL A

ART UNIT	PAPER NUMBER
----------	--------------

2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/786,074	Applicant(s) NAGAO ET AL.	
	Examiner Michael Faragalla	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 8, 10 and 12 is/are rejected.
- 7) ☐ Claim(s) 5, 6, 9, 11 and 13-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: WIRELESS LAN APPARATUS FOR CHANGING PACKET LENGTH ACCORDING TO CHANGING CONDITIONS.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Consider **Claim 7**, the applicant mentions in claim 7 that "as the transmitting-side configuration thereof, a wireless receive unit". The transmitting side should have a wireless transmit unit. It is respectfully requested to change that part of the claim.

Claim Rejections - 35 USC § 103

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

Art Unit: 2617

obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims **1-4, 7,8,10 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fitzgerald et al (Patent number: 6,886,040)** in view of **Shoemake et al (Patent number: 2002/0122413)**.

Consider **Claim 1**, Fitzgerald et al clearly shows an apparatus comprising:

(a) As a transmitting-side configuration thereof,

A packet length-controlling unit, the packet length-controlling unit (read as packetizer 24) controlling a packet length of transmit data (column 4, lines 64-67; column 5, lines 1-7); (packetizer 24 stores table of acceptable payload sizes).

(b) A Packet synthesizing unit, the packet synthesizing unit synthesizing the number of the transmit data corresponding to the packet length controlled by the packet length controlling unit into a packet transmit data and outputting the transmit packet data (figures 2 and 4; column 4, lines 38-46); (data is outputted afterwards to transmitter in order to be transmitted).

(c) A frame synthesizing unit, the frame synthesizing unit appending the packet length information to a header information of the transmit packet data synthesized by the packet synthesizing unit and outputting the transmit packet as a transmit frame (figures 1 and 4); (the header is attached to payload data).

However, Fitzgerald et al shows an apparatus, but does not specifically show a wireless LAN apparatus comprising a wireless transmit unit transmitting wirelessly the transmit frame output by the frame synthesizing unit.

Art Unit: 2617

In the same field of endeavor, Shoemake et al shows a wireless LAN apparatus comprising a wireless transmit unit transmitting wirelessly the transmit frame output by the frame synthesizing unit (figure 1; paragraph 25; abstract).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Shoemake into the teaching of Fitzgerald in order to enable the wireless devices to communicate with one another over the Internet.

Consider **Claim 8**, Fitzgerald et al clearly shows an apparatus comprising:

(a) As a transmitting-side configuration thereof, a transmit unit, the transmit unit synthesizing one or a plurality of transmit data into a transmit packet data and appending a packet length information indicating the number the transmit data synthesized into the transmit packet data to a header information of the transmit packet data and transmitting the transmit packet data as a transmit frame (figures 1 and 4; column 4, lines 50-61).

(b) As a receiving-side configuration thereof, a receive unit, the receive unit receiving the transmit frame transmitted by another apparatus configured likewise (figure 3).

(c) A packet extracting unit, the packet extracting unit (read as de-packetizer) separating the received transmit frame (read as payload in combination with header) into the transmit packet data and the header information (figure 3; column 3, lines 20-33); (the de-packetizer separates out the audio frames).

Art Unit: 2617

(d) A packet length detecting unit (read as jitter buffer), the packet-length information included in the transmit frame in the header information separated from the transmit frame by the packet extracting unit (column 5, lines 20-32); (after the audio frames are separated they are buffered in order to be processed).

(e) A packet dividing unit, the packet dividing unit dividing the transmit packet data separated from the transmit frame by the packet extracting unit based on the packet-length information detected by the packet length detecting unit and outputting the divided transmit packet data (column 4, lines 4-17).

However, Fitzgerald et al shows an apparatus, but does not specifically show a wireless LAN apparatus comprising a wireless transmit unit transmitting wirelessly the transmit frame output by the frame synthesizing unit.

In the same field of endeavor, Shoemake et al shows a wireless LAN apparatus comprising a wireless transmit unit transmitting wirelessly the transmit frame output by the frame synthesizing unit (figure 1; paragraph 25; abstract).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Shoemake et al into the teaching of Fitzgerald in order to enable the wireless devices to communicate with one another over the Internet.

Consider **Claim 2**, Fitzgerald et al as modified by Shoemake et al shows a wireless LAN apparatus as claimed in Claim 1, wherein the packet length controlling unit comprises a packet length register, the packet length register

Art Unit: 2617

capable of externally controlling the packet-length information (column 3, lines 1-20; figure 1).

Consider **Claim 3**, Fitzgerald et al as modified by Shoemake et al shows a wireless LAN apparatus as claimed in Claim 2, but fail to specifically show that the wireless LAN apparatus, wherein the packet length controlling unit comprises:

A timer, the timer restarting based on an input of a reset signal; a timer termination register, the timer termination register instructing a count termination value of the timer, and a force-transmit instructing device, the force-transmit instructing device outputting a transmit instructing signal to the packet synthesizing unit when a count value counted by the timer agrees with the count termination value instructed by the timer termination register, and wherein the packet synthesizing unit outputs the reset signal to the timer based on the output of the transmit packet data and prioritizes the transmit packet data over the packet-length information from the packet length register when the transmit instructing signal from the force-transmit instructing nit is input thereto to thereby output immediately the transmit packet.

However, in the same field of endeavor, Shoemake et al shows that the wireless LAN apparatus, wherein the packet length controlling unit comprises:

A timer, the timer restarting based on an input of a reset signal; a timer termination register, the timer termination register instructing a count termination value of the timer, and a force-transmit instructing device, the force-transmit

Art Unit: 2617

instructing device outputting a transmit instructing signal to the packet synthesizing unit when a count value counted by the timer agrees with the count termination value instructed by the timer termination register, and wherein the packet synthesizing unit outputs the reset signal to the timer based on the output of the transmit packet data and prioritizes the transmit packet data over the packet-length information from the packet length register when the transmit instructing signal from the force-transmit instructing nit is input thereto to thereby output immediately the transmit packet (figure 6; paragraphs 44.44. and 46). Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Shoemake et al into the teaching of Fitzgerald in order to determine the effective data rate for transmission (Shoemake et al, paragraph 35).

Consider **Claim 4**, Fitzgerald et al as modified by Shoemake et al shows a wireless LAN apparatus as claimed in Claim 2, but fail to specifically show that the wireless LAN apparatus further comprises, as a transmitting-side configuration thereof, a data rate detecting unit, the data rate detecting unit detecting a transmit rate of the transmit data input to the packet synthesizing unit and outputting the detection result as a data rate detection signal, wherein the packet length controlling unit further comprises a packet-length rate controlling device, the packet-length rate controlling device increasing or decreasing the packet-length information from the packet length register based on the data rate detection signal from the data rate detecting unit.

Art Unit: 2617

However, in the same field of endeavor, Shoemake et al shows that wireless LAN apparatus further comprises, as a transmitting-side configuration thereof, a data rate detecting unit, the data rate detecting unit detecting a transmit rate of the transmit data input to the packet synthesizing unit and outputting the detection result as a data rate detection signal, wherein the packet length controlling unit further comprises a packet-length rate controlling device, the packet-length rate controlling device increasing or decreasing the packet-length information from the packet length register based on the data rate detection signal from the data rate detecting unit (abstract; paragraphs 15,30 and 35). Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Shoemake et al into the teaching of Fitzgerald in order to derive a peak data rate as a function of packet length (Shoemake, paragraph 31).

Consider **Claim 7**, Fitzgerald as modified by Shoemake et al shows a wireless LAN apparatus as claimed in Claim 1, wherein as a receiving-side configuration of the apparatus, the wireless transmit unit creates a packet length control frame enabling the packet length of the transmit frame transmitted by another wireless LAN apparatus of the present invention and wirelessly transmits the packet length control frame to the another wireless LAN apparatus, further comprises: As the transmitting-side configuration thereof, a wireless receive unit, the wireless receive unit receiving the packet length control frame transmitted wirelessly by another wireless LAN apparatus configured likewise; and a packet

Art Unit: 2617

length control frame detecting unit, the packet length control frame control frame detecting unit judging the packet length control frame received by the wireless receive unit and outputting a packet length request-to-reduce signal when the packet length control frame instructs the packet length to be reduced and a packet length request-to-extend signal when the packet length control frame instructs the packet length to be extended, wherein as the transmitting-side configuration of the apparatus, the packet length controlling unit reduces the packet length information when the packet length request-to-reduce signal is input thereto and extends the packet length information when the packet length request-to-extend signal is input thereto (column 4, lines 64-67; column 5, lines 1-7; figure 1; paragraph 25; abstract).

Consider **Claim 10**, Fitzgerald et al as modified by Shoemake et al shows a wireless LAN apparatus as claimed in Claim 1 comprises:

- (a) As a receiving-side configuration thereof, a receive unit, the receive unit receiving the transmit frame transmitted by another apparatus configured likewise (figure 3).
- (b) A packet extracting unit, the packet extracting unit separating the received transmit frame into the transmit packet data and the header information (figure 3; column 3, lines 20-33); (the de-packetizer separates out the audio frames).
- (c) A packet length detecting unit, the packet length detecting unit detecting the packet-length information included in the transmit frame in the header information separated from the transmit frame by the packet extracting unit (column 5, lines

Art Unit: 2617

20-32); (after the audio frames are separated they are buffered in order to be processed).

(d) A packet dividing unit, the packet dividing unit dividing the transmit packet data separated from the transmit frame by the packet extracting unit based on the packet-length information detected by the packet length detecting unit and outputting the divided transmit packet data, wherein as the transmitting-side configuration of the apparatus, the packet length controlling unit controls the packet length of the transmit data (column 4, lines 4-17).

However, Fitzgerald et al shows an apparatus, but does not specifically show detecting a transmit-channel-distortion information in the received transmit frame, and further does not show that controlling the packet length is based on the transmit-channel-distortion information detected by the wireless receive unit.

In the same field of endeavor, Shoemake et al shows detecting a transmit-channel-distortion information in the received transmit frame, and further does not show that controlling the packet length is based on the transmit-channel-distortion information detected by the wireless receive unit (abstract; paragraphs 16,30, and 32).

Therefore, it would have been obvious to a person skilled in the art at the time the invention was made to incorporate the teaching of Shoemake et al into the teaching of Fitzgerald in order to determine the need for length optimization (Shoemake, abstract).

Art Unit: 2617

Consider **Claim 12**, Fitzgerald et al in view of Shoemake et al show a wireless LAN apparatus as claimed in Claim 10, wherein as the receiving-side configuration thereof, the wireless receive unit outputs a peak-value information indicating the status of a peak value of a correlation signal in connection with a synchronous reference symbol of the transmit frame received from another wireless LAN apparatus configured likewise, further comprises:

As the receiving-side configuration thereof, a synchronous detection signal judging unit judging the status of transmission channel for transmitting wirelessly the transmit frame based on the peak-value information; and a packet-length information creating unit, the packet-length setting information for the transmit data based on the judgment result by the synchronous detection signal judging unit and outputting the packet-length setting information to the packet length controlling unit, wherein as the transmitting-side configuration of the apparatus, the packet length controlling unit controls the packet length of the transmit data based on the packet-length setting information.

Allowable Subject Matter

8. Claims **5,6,9,11,13,14,15, and 16** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) APPARATUS AND METHOD FOR SPEECH TRANSPORT WITH ADAPTIVE PACKET SIZE (**Patent number: 6,370,163**).

(2) METHOD AND ROUTER CHANGING FRAGMENT SIZE OF DATA PACKETS (Patent number: 6,956,867).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Faragalla whose telephone number is (571) 270-1107. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Faragalla

Patent Examiner

02/14/2007



NICK CORSARO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600